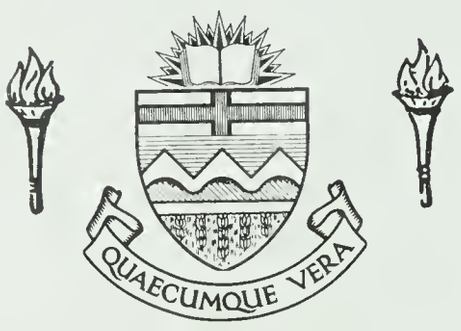

THE UNIVERSITY OF ALBERTA

A STUDY TO TEST THE EDUCATIONAL VALIDITY OF AN IN-SCHOOL CONCERT

by

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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Study to Test the Validity of an In-School Concert," submitted by George Charles Naylor in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

The study attempted to determine:

(a) whether a concert given by professional musicians in schools has educational validity,

(b) whether the prior use of programme notes by the class-teacher materially affects learning,

(c) whether such a concert can affect student attitudes towards music, and if so,

(d) the effect of selected variables on the noted change.

A segment of the Edmonton Symphony Society's educational program was examined, and fourteen grade 6 classrooms from the Edmonton Public School Board system were tested. A two-part questionnaire was administered to all of the selected sample. Thereafter, the experimental group was randomly designated. Programme notes covering the demonstration were left with the teachers of this group. About a week later the lecture-demonstration on the instruments of the orchestra was given by the 13-piece orchestra, conducted by the researcher. Immediately after the demonstration, the same questionnaire was re-administered. In addition, a questionnaire was sent with every child to the parents, which attempted to determine the musical environment of the home. Over 71 per cent of these were returned.

Analysis of the data revealed:

(a) That the demonstration did succeed in imparting information. The post-test scores were significantly better than the pre-test scores.

(b) The use of the programme notes did not aid learning. Doubts were expressed regarding the use made of the notes on the basis of the students' correct responses to three questions which appeared only in the notes.

(c) The single demonstration had an effect on student attitude, but only on the basis of one question. It was considered unwise to draw a conclusion from such tenuous evidence.

(d) There was no significant correlation found to exist between student attitude and sex. The relationship between home-environment and student attitude was not significantly affected by one concert, as measured at the pre- and post-concert test levels. The only significant correlation noted was that between attitude and student academic achievement. The high-achievers showed a considerable and significant shift of attitude, whilst the low-achievers did not. This implies that although one such demonstration-concert might be sufficient to influence high-achievers more exposure is needed to obtain any consistent results with the average student. Further research was found to be needed to determine what the optimum amount of exposure might be.

The wisdom of using musicians to undertake teaching tasks was discussed, with the differing concepts of concert-hall atmosphere (for experiential purposes) versus in-school concerts (for educational purposes) needing clarification. The place of such concerts in the school curriculum was also discussed, and the necessary administrative decisions noted.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

TABLE PAGE

FIGURE

CHAPTER I

INTRODUCTION

The advent of the mid-twentieth century has brought new insights into a social phenomenon which has profound importance for future educational curricula. Early industrial society regarded unproductive time as empty and wasteful. Time was for honest labour or needed rest. The cybernetic age is reducing the necessity for manual labour and consequently the amount of time necessary for the fulfilment of productive tasks. Now people do not expect to fill their lives with work. The reappraisal of human social activity has led to the awareness that leisure time is not wasted time. Yet to produce emotional satisfaction the new-found leisure time must be used wisely. This entails instruction in its use, instruction which because of its depth and intensity must be started early and continued throughout a student's school career.

> Perhaps our children--certainly our grandchildren--will have to live with fewer material possessions. It is not too early to turn to inner resources which are limitless; to art, music, literature, good conversation; to a cultivation of a more contemplative way of life. . .[1]

Indeed, with the accelerated pace of technology, many of today's students will be employed in occupations as yet unknown. Schools contemplating the future can only realistically teach basic principles which will equip their students with the tools for self-learning. The intelligent use of leisure time could conceivably

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[1] H. G. Rickover, Education and Freedom (New York: Dutton and Co., 1959), p. 32.

become the only function of pre-university education which will remain constant for a life-time. This may well be the most important concept in schooling yet to emerge.

The mounting concern for the future by unionized workers faced with "unproductive" leisure, by management faced with production decisions involving automation, and by municipalities faced with spiralling costs, is now putting pressures on the educator to "do something." Reisman's characterization that we "live now, think later"[2] is undergoing a change. Now the scientists are quite clear about the possibilities the future holds out for us. Their problem is one of priorities and direction.[3] One would like to believe that the problem is as clearly defined in education. Unhappily such is not the case; generally practitioners of the arts and education are still blessed with the same "live now, think later" philosophy which scientific minds have shed. Certainly music education has been more concerned with catching up to the changing social scene than to anticipate it. Frances Andrews points out that nowhere in the literature of music education has she found reference to "what we might envisage as the ideal product of music as we foresee its future emergence. "What," she asks,"is the living goal of our quest?"[4]

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[2]D. Reisman, "Abundance of What?" Bulletin of Atomic Scientists, April, 1958, p. 130.

[3]B. J. Muller-Thym, Changing American Population (New York: New York Institute of Life Insurance, 1962), p. 93.

[4]Frances M. Andrews, "Issues and Problems in Music Education," Music Educators Journal, XLIV: 1 (October, 1962), p. 110.

Just what should be the aims of the arts in society? All seem convinced that they are a part of being 'civilized'; indeed some would claim the main part. The position paper of the Secondary School principals stated in part:

> The arts are a subject discipline which emphasize the use of the intellect as well as the development of sensitivity, creativity, and the capacity to make reasoned aesthetic decisions in extending the range of human experience. The arts give direction to man's pattern of living, from the setting of his table to the expression of his most cherished aspirations. The arts constitute a vast communications system which complements man's cognitive word system.[5]

Yet a critical evaluation of music curricula and of criteria reveals an incomplete model. The means are fairly well understood and practised; the intermediate goal derived from these goals is understood with less definition but still perceivable. But at each end of the continuum clarity vanishes. The goals of music education and the outcomes related to those goals are not empirically defined. There is no inter-relationship between the two and hence no ultimate criteria on which to assess success or failure. The Yale seminar,[6] after much learned deliberation, decided that schools should aim to teach 'musicality,' and then admitted that they were unable to define the term, even though all musicians recognized it. The NSSSE has developed such evaluative criteria as the following:

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[5]"The Arts in the Comprehensive Secondary School: a position paper adopted by the National Association of Secondary School Principals," Music Educators Journal, XLIX: 2 (December, 1962), p. 60.

[6]Yale Commission Seminar report on Music Education, (Yale, New York, 1958).

> . . . to what degree are listening skills and an appreciation of music being developed in all students; to what extent is instruction consistent with the philosophy of the school, and the needs of the students.[7]

These and many other criteria raise more questions than they attempt to solve. Such curricula as are extant in Alberta are quite as ill-defined. Bulletin 2D[8] issued in 1961, talks about "a love of music" without ever becoming more specific.

This ill-defined approach to music curriculum is to a large extent hidden under the spate of 'projects' which are constantly underway. These, however, should not be allowed to cloud the basic issue, that of establishing clearly defined aims and objectives which will yield to empirical evaluation. Piecemeal attention to practice is not a substitute, and is really of little more help than the 'finger-in-the-dam' approach.

The Problem

External proponents of music have desired to reach young people, and generally leaving teaching to educators, have concentrated their attention on enrichment by taking their art to the students. Thus, quality performances of music which are beyond the talent of in-school groups are extended to the students. This is one of the strong motivating forces which prompts symphony orchestras and school boards to plan concerts for the young in the face of

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[7] Evaluative Criteria, (Washington, D.C.: National Study of Secondary School Evaluation, 1960).

[8] Elementary School Music, Interim Bulletin 2D, (Edmonton: Government of Alberta Department of Education, Queen's Printer, 1961).

considerable difficulties, both financial and administrative. The rewards are tenuous. It is in this area that the present enquiry is centred, and it is hoped that this research may strengthen their case.

The concept of school concerts by visiting groups is old and well established. In North America, the first symphony concerts given solely for children occurred in 1891 in Chicago.[9] Since that time almost all other orchestras have undertaken such concerts. In 1957, the Symphony League secretary reported on an investigation involving seventy-one orchestras and stated that:

> The study points up one major conclusion--some way must be found to . . . present more youth concerts if orchestras are seriously interested in building audiences for the future . . .[10]

In Edmonton, Alberta, an in-school concert program has been developing at an amazing rate in the last four years. In 1964, there were twelve school concerts. Four years later, in the 1967-68 season, the program consisted of 120 concerts for grade 6 classes by a 13-piece orchestra; 23 concerts for grade 7 and 8 classes by a wood-wind quintet; 23 concerts for grade 7 and 8 classes by a string quintet; 10 concerts for senior high schools by a 26-piece orchestra; and 2 Adventures-in-Music programs by the full orchestra. The Adventures in Music concerts were given in a concert hall to over

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[9]American Symphony League, Newsletter, Vol. 8, No. 2, (Charleston, S. Carolina, 1956), p. 9.

[10]American Symphony League, Memo No. 150, (Charleston, South Carolina, 1957), p. 17.

two thousand children at a time; all the other concerts took place in the schools to audiences of between 90 and 150 children at a time. At first consideration this program appears to be very comprehensive, but beyond the concept that "school concerts are good," no clear format for program development, or the shaping of the presentations themselves, has evolved.

There is no division in the literature regarding the aims of the content of school concerts:

> Educational concerts are planned and played not only with the idea of capturing the immediate attention of the young listener and giving him a happy hour, but with careful thought to his musical past and future--to the continuity of his listening experience; programs planned to illustrate and impress unforgettably the fundamentals of music--tone and tonal design; above all programs planned and played to present music not only as a great art but as a greater humanity, a satisfactory expression of the inner life of men and women and children of all times and places.[11]

Educators from Plato to the present believe that it is possible to influence those who are taught, and to shape their opinions; that attitudes towards learning are as malleable in the study of music as in any other subject area.[12] Unfortunately, little quantitative proof is offered.

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[11] Concerts for Children and Young People as Part of Music Education, (Music Education Research Source Book, Washington D.C.: Music Educators National Conference, 1953), Chapter XXIII, pp. 137-8.

[12] Mabel Linder, "Curtain Time," Clearing House, XXVII: 4 (December, 1952), pp. 212-3.

> ". . . Make no mistake about it, witchery (at a live concert) exists for several reasons. . . In any case, whatever the student's particular interest, here is a professional performance, beyond the performance of amateurs, beyond the mediocre. . ."

In the years that the Edmonton program has been in operation, no guide-lines regarding content have ever been established by the school boards. In spite of repeated requests from various representatives of the musicians, no practical help has ever been forthcoming--indeed, no aspect of the program had received consistent visits from any school board representative for the first two years. Thus, there are no available terms of reference for the leaders of the groups who may not necessarily be trained in pedagogy or in curriculum development. Inquiries about the schools seem to indicate that there is a lack of a generally understood and followed curriculum on which the Symphony Society may base its concert presentations, and this fact is the biggest single problem in effective planning. Reinforcement of the school music program is impossible in view of the lack of a consistently followed curriculum.

Specific Problems

Given the assumption that school concerts are worthwhile, and are capable of meeting the claims advanced for them, the literature reveals a division of opinion concerning the mechanics of the concert presentations. This division covers the two main administrative areas in concert-giving, the 'where to play' and the 'what to play'; the 'locale' and the 'content.'

A. Locale. There is a division of opinion within this area which concerns itself with the emotional impact of the presentation. Students hearing a group of musicians in their own classroom should be in a more receptive learning climate and so be in a position to

concentrate on the presentation without diversion.[13] There is also a considerable saving of academic time by taking the presentation to the students. However, other writers claim with justification that concert-going is a form of social experience which requires specific behaviour and that a concert can help to teach this behaviour as well as imparting facts. The proponents of this approach[14; 15] argue that the formality of the concert hall is a worthy experience for children. The first approach creates a personal and intimate involvement with the music and the musicians, whilst the latter is much more formal.

Edmonton, though catering to the first premise primarily, also undertakes the second type in its 'Adventures in Music' programs in the Northern Alberta Jubilee Auditorium.

B. Content. There is considerable concern regarding the content--just what to play, and what to talk about to which age group. The decision is often (and in Edmonton always) left to the musicians both with regard to the specific music and also the

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[13] Ibid.

[14] Music Education Research Source Book, op. cit., p. 139.

[15] California Journal of Elementary Education, XXIV: 4 (May, 1956), p. 217.

> ". . . Although music has well recognized values as a means of self expression, music educators should provide a place of importance for musical experiences that are impressive as well as expressive. Upon occasion it is the privilege of the music educator to bring to children experiences which create such lasting impressions that they remain in their memories as a source of enrichment throughout their lives. . ."

intention of the piece. As a result, such considerations as the easy availability of the music, its state of preparedness (to eliminate costly rehearsal), and whether the musicians enjoy playing it, are often unduly determining factors. The decision to program a particular piece of music is seldom determined by its ability to lead towards future musical experiences.

Purpose of the Study

Answers are needed to help achieve effectiveness in school concerts relative to the above problem areas. With the burgeoning costs of education, the musicians are going to be called upon to defend their opinions. (The budget in Edmonton for 1967-68 was over $27,000.00, of which the School Boards produced about $8,200.00, and the balance was provided by the Symphony Society.) The educational program has existed for several years, however, and the musicians themselves need direction in programming. The questions of format and locale are out of their control. Therefore, it would seem that the most immediately useful and usable findings would be in the area of content.

With this in mind, one segment of the Edmonton program was examined to consider the following three main problems:

1. Can school concerts be considered to be instructional? Music as a discipline has a certain corpus of facts (nomenclature, timbres, acoustical properties), and if an awareness of these facts helps to increase appreciation of the whole art, then it may well increase the interest of the listener. Therefore, if facts are

presented at a concert, examination of the student population will determine the efficiency of the teaching.

2. Does an advance notice of the content of the program materially affect achievement scores in a post-concert test? Since the success of any teaching depends to a large degree upon the efficient presentation of the material, testing the amount learned could be taken as a guide to the efficiency of the presentation. However, it is claimed[16] that children brought up in our society with its noise element ever-present are finding that the auditory sense unsupported by other senses is becoming increasingly suspect and unreliable, and so it may be that some further sort of stimulus is needed to reinforce the auditory sense. If the concert is in fact an auditory reinforcement of previously learned material, the learning rate may be considerably higher, thus suggesting important implications for future concert-giving.

3. Can school concerts materially affect attitudes towards music? The literature of music education seems to agree with the Platonic concept[17] that familiarity with the 'Good' will develop a taste for the 'Good.' When judged from a music education viewpoint, this would imply that if it is possible to teach children about the wonders and artistic worth of 'our' kind of music (serious music seems to be an unfortunate term, as does 'classical' -- perhaps what

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[16]Marshall McLuhan, Understanding Media, (New York: McGraw Hill & Company, 1966), p. viii.

[17]Plato, The Republic, 377.

is meant is music which has rather more depth and concern of purpose than the more immediately accessible music which is the standard diet of most young people) and if children are exposed to this music with any consistency, they will come to love it. Whether the concept is a true one, and whether such moulding does in fact take place is in itself a moot point, but the literature, and the whole raison d'etre of music education implies that it does.

> One of the greatest lacks in our country today, . . . is the lack of taste in almost everything we do. There is only one way to develop taste, in the home or in the school; by giving youngsters an opportunity to know what is good . . . With taste comes a demand for what is good--and with demand comes support.[18]

The low percentage of the population which supports the arts in a community[19] in spite of a long exposure to such teaching might well be a reflection on the validity of the concept. It would nevertheless be valuable to know whether an isolated musical presentation can affect attitude. The ability of the presentation to achieve the stated ideals, to develop a critical faculty, and to develop an aesthetic awareness might be determined if an instrument to measure such changes can be constructed.

The consideration of attitudes in this third question has prompted the analysis of other factors which may affect attitudes.

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[18] Howard D. McKinney, Fischer Edition News, (September, 1951).

[19] American Symphony League, Memo No. 150, loc. cit.

This report claims that less than one per cent of the population of North America is in any sense regularly concert-going. The Edmonton Symphony Society is very proud of its almost two per cent population subscription list.

Unlike the instilling of facts which seldom require any 'unlearning' prior to their acceptance, the instilling of an attitude often entails the elimination of one attitude and its replacement by another. The students' attitudes towards music will have been established by the time they are exposed to the presentation. The interplay of many factors in the students' lives including sex, teacher-training, teacher behaviour, home musical environment, academic achievement, and socio-economic factors affect this attitude. Several of these factors may also affect the students' willingness to change attitudes. Since the concert attempts to change the established attitude if it is considered less than desirable, the effect of these factors on attitude development and on attitude change is of considerable importance.

Hypotheses

In order to answer the questions posed above, the following six hypotheses were tested:

1. The control group's post-test factual score will be significantly greater than its pre-test factual score. This will indicate that the concert can affect factual learning and hence that the concert can be considered to be instructional.

2. The experimental group's post-test factual score will be significantly greater than the control group's post-test factual score. This will indicate that the program notes are effective in preparing students for a learning experience of this nature.

3. In both groups the post-test attitude scores will be significantly

greater than the pre-test scores. This will reveal that the concert can affect attitudes positively.

4. A change of attitude is positively correlated to the student's home musical environment. The more positive the score on the parent's questionnaire, the more likely the student is to achieve a positive score on the attitude test.

5. A change of attitude is positively correlated to the student's academic achievement as reported by the school. The higher the academic achievement score, the greater the receptivity of the student to the style of music presented.

6. The sex of the student will be a factor affecting both the factual and the attitude scores. The findings will reveal that girls have a greater receptivity to the total subject area.

Need for the Study

Certainly in the Edmonton area there is need for a study which will empirically indicate whether the efforts of the musicians and the Symphony Society are having any effect, or whether they are failing. It may well be that they, too, are paying lip service to an unattainable ideal, with ends which are unrealistic. It is intended that this study will produce data to substantiate their ideal, and that indications can be perceived which will lead their efforts towards a more successful product. If the data indicate a weakness in approach towards this goal, they may also serve a diagnostic purpose, leading to more genuine achievement in this teaching area.

Limitations of the Study

The following limitations were imposed upon this study:

1. Only a representative sample of the total school population was tested. (See page 26.)

2. Only one part of the Symphony Society presentations was selected for examination. The other four parts (see page 2) were excluded.

3. The decision to examine the already scheduled concerts by a 13-piece orchestra meant that the locale of the concerts was automatically decided. All of the concerts were presented in the students' own schools to small groups. A comparison between the results obtainable using this format and those obtainable from a large concert-hall situation could not be made. (See page 7).

4. The sample was drawn entirely from the Edmonton Public School Board system. The Separate School Board students were excluded for concert scheduling reasons. (See page 25.)

Definition of Terms Used

The definition of the key terms used in this study are as follows:

1. Edmonton program refers to the total activities of the Edmonton Symphony Society's educational concerts. These are detailed on page 5.

2. Symphony Society is understood to refer to the Edmonton Symphony Society.

3. Concert in this context should be understood to mean a

musical concert but including a spoken explanation and commentary, so that a better, if clumsier, description would be "lecture-demonstration." The shorter term will be used throughout to describe the Edmonton activities, but implies the latter term.

Organization of the Remainder of the Thesis

The remainder of this thesis is organized according to the following plan. Chapter II presents the related research and literature on the present problem. Included in the chapter is a review of the only comparable study in this field, and the current research dealing with the possible variables encountered. Chapter III describes the design of the study, the selection of the sample, the variables, the test instruments, and the collection of the data. Chapter IV presents the data in the order of the problems stated in Chapter I and looks at the data obtained on the variables examined. Chapter V presents the conclusions drawn from the data, and the implications to be drawn for future concerts together with areas where more research is needed. The appendices include the letters and questionnaires used in the project.

CHAPTER II

RELATED RESEARCH

This study attempted to determine various effects of a concert given to children with a specific educational objective in mind. If these concerts, and the many others of a similar nature given annually by almost all of the orchestras in North America have any educational validity, then it should be possible to determine this validity. It also seemed very likely that someone had already done so, since the concept of school concerts is now over seventy years old. If such a study existed, then the design of that particular study would have been a useful guide for adaptation to the Edmonton study.

Relevant Studies in Music

David Van Vactor,[1] under a Fulbright fellowship, undertook a comparison of children's responses to a concert series in two countries. He staged a series of four concerts in Knoxville, Tennessee, and the identical series in Frankfurt, Germany. He administered pre- and post-tests to about five hundred children, and attempted to determine the amount of factual learning which had taken place. He also attempted to determine any alteration of opinion or attitude towards music resulting from the concerts.

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[1]David Van Vactor, Every Child May Hear, (Tennessee: University of Tennessee Press, 1960).

Some of the more important conclusions drawn by Van Vactor from his series are listed as follows:

1. Musical tastes and judgements can be upgraded by a minimum of four special concerts for children, and best results may be expected if the concerts are spaced closely together.

2. Preference in popular music declined numerically after the concerts, although it remained the undisputed favourite.

3. After the concert series, the children indicated a growth in appreciation of symphonic music.

4. For the Frankfurt children, the concerts served to strengthen their enjoyment of opera which plays such an important part in the musical culture of their country. Knoxville children, however, showed little new interest or appreciation of opera after the concerts.

5. Strong national musical institutions do exert an influence upon the tastes of young people. Thus, if one likes the music which is most familiar to him, the presentation of more fine music is the surest way of developing a discriminating audience for symphony orchestras.

There were some significant areas of enquiry in the study that were not paralleled in the Edmonton study. The Van Vactor concerts were given to a large audience, a factor which tends to impersonalize the impact of the conductor-teacher, whereas the Edmonton study was given to groups of children of not more than one hundred at a time in their own school. Seated around the orchestra, every child was in eye-to-eye confrontation with the conductor, and was so close to the musicians that every individual movement was clear. Of more fundamental difference, however, was the range of students attending the concerts. The Van Vactor series encompassed the whole range of the school population at the same time, from the

early grade school to senior high in America, and from the Volksschule, through the Mittelschule to the Gymnasium in Germany. The Edmonton study was deliberately limited to grade six students in the Public School System. This eliminated a whole area of variables, which could have had a profound effect on the findings.

Limiting the age group of the recipients may well have had the effect of restricting the effectiveness of the concert because of the receptivity of this age group. One such study had been made in which this factor was considered. Dolph[2] conducted a study of musical taste change according to age. He reported that folk music reaches the peak of its appeal to youngsters when they are about eleven years old, and declines steadily through the late teens (17-19). Popular music has its greatest appeal for young people from their fourteenth to the their sixteenth years. From that age onward classical music grows steadily in appeal, if youngsters have an opportunity to hear it. This change in taste according to age suggests that maximum opportunities to hear good music should be offered by the school and the community after the sixth grade, when changes in listening begin to take place.

As the Edmonton study was to include aspects that were untouched by Van Vactor, a review of the literature was made to determine the current findings in these areas. Sex-differences, socio-economic factors, home musical environment, teacher rating,

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[2] J. Dolph, "Teenagers and Music," Music Journal IX: 5, (September, 1951), p. 39.

and teacher behaviour were all researched.

Sex Differences and Achievement

The literature reveals a divergence of reported opinion regarding the effects of sex on achievement, which may be due to the effect of the subject area, or to the selection of the criteria for the reported study, or to both.

A study made in 1965[3] covering both high and low socio-economic areas reported that sex had no significant effect on the mean achievement scores of grade school children. This was true at all socio-economic levels. However, an American survey of the literature[4] revealed that sex does have a marked effect on achievement in the areas of language abilities and of learning comprehension. This research was borne out by a study undertaken in the same cognitive areas with Canadian children;[5] it was found that boys were inferior to girls in kinesthetic development and profited most from auditory and visual methods of learning. It was recommended that methods of teaching and learning word recognition be differentiated for the sexes, at least during the early stages of such learning.

Clearly there is a divergence of opinion in the reported

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[3]F. H. Wood, "Differences in the attainment value placed on achievement in school activities in grades 1 and 3." (Unpublished Doctor of Education dissertation, University of Minnesota, 1965.)

[4]W. Waetjen and J. Crambs, "Sex Differences: A Case of Evasion?" Teacher College Record, 65, (December, 1963), pp. 261-271.

[5]D. S. MacAuley, "Word Recognition as a Function of Sensory Mode of Learning for First Grade Entrants." (Unpublished Master of Education Thesis, University of Alberta, 1965.)

research and it was considered that neither the general achievement nor the verbal comprehension areas as examined in these studies paralleled music closely enough for assumptions to be drawn from the studies. Therefore, sex as a potential factor was programmed into the Edmonton study.

Socio-Economic Factors

Various research projects have been undertaken in other centres in an attempt to determine the relationship between various socio-economic factors and student attitudes, and definite correlations have been established. It is extremely difficult, however, to gather data which can be considered to be reliable. The teacher's judgement of the student could not be relied upon, nor could the location of the school in any but the most general sense, since in almost all areas there are private homes and rented accommodation encompassing a wide range of living conditions. Rather than have false and indefensible conclusions this area was deleted from the study.

Home Musical Environment

The home musical environment and socio-economic factors are very closely allied, and an attempt was made to determine the extent of music in the lives of the children by asking the parents to complete a questionnaire (see Appendix B). No especially relevant research was found in the literature on this subject, but one peripherally related finding is worth recording. A study by

Goodrich[6] concerned itself with college students. He administered questionnaires, and placed selected school-age musical activities into sub-groups which he compared against categories of environmental influences and post-high school music related choices. His pertinent conclusions were:

1. that the majority of respondents favoured the type of music program offered them as students, and would urge its continuance for their children.

2. the home musical environment exerts measurable influence on choice of musical activities made by the student.

The first conclusion was replicated in the Edmonton study. Almost every parental response favoured music lessons for children in general, though a few were not interested in lessons for their own children. The vast majority of respondees felt that the amount and type of music currently taught in schools was fine, with a small percentage advocating an even greater time allotment.

The second conclusion was not checked in the Edmonton study in its given form, since the students were not given a choice of activity. However, the effect of the home musical environment on student attitude towards music was examined in the study.

One further study with a different bias attempted to relate socio-economic factors to student academic achievement. Paulson's[7]

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[6]D. E. Goodrich, "The musical activities of graduates of the Hastings Public Schools," (Unpublished Doctor of Education dissertation, University of Nebraska, 1965).

[7]R. F. Paulson, "A Study to determine the influence of personal factors upon achievement test scores, and the relationship of such factors," (Unpublished Doctor of Education dissertation, University of Utah, 1965).

study was a close parallel in that his test grades were exactly the same as the Edmonton study. He administered the Metropolitan Achievement Test to sixth graders, and amongst his conclusions found that:

1. Personal factors in the lives of the students have a real influence on their school achievement.
2. The influence of educationally oriented parents is a strong determinant to the success of their children.

In the Edmonton study it was deemed unnecessary to check the first finding, since the study accepted academic achievement as measured by the schools.

The second finding was checked against the Edmonton findings by programming home musical environment as a factor, with the presumption that the home musical environment would relate to 'educationally-oriented' parents in this particular subject area.

Teacher Rating

This single factor seems to the interested observer to be of such fundamental importance to student attitude that it was hoped to be able to establish some measure of quality or skill to check as a factor in the achieved scores. It was found that many test programs and articles had been written and undertaken in all sectors of the country, at all levels of education, under all conceivable variants. As a general rule, research[8] undertaken before about 1961 implied that teachers could be evaluated, whilst almost all research

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[8] A Prediction of Effectiveness in Secondary School Teaching, (New York: State Education Department, June, 1959).

undertaken since 1961 concluded that evaluation might be possible,[9] but that the researcher did not know how to measure it.[10] The two main arguments against such an attempt at evaluation are (a) that no two teachers are alike and so cannot be compared with one another mathematically, and (b) that the 'output' of a teacher may not be apparent for some years. The 'output' referred to in this case could be change of student attitude, since factual learning by the students is immediately testable. As learned opinion and personal experience agree on this matter is was deemed judicious not to attempt to incorporate such an untestable factor into the study.

It is interesting to note that the arguments which are used against teacher-rating can be used with the same validity against concert-rating. Conversely, arguments can be advanced for the inclusion of concerts into the enrichment portion of the curriculum with no concrete conclusions being drawn about their ultimate worth.

Teacher Behaviour

It was decided to establish the experimental group on the basis of teacher acceptance and usage of the program notes which were made available at the time of the administering of the pre-test questionnaire. The remaining classes were denoted as the control group. These notes contained the facts of the concert program to be

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[9]National Education Association, Why Have Merit Plans Been Abandoned? (Washington, D.C.: National Education Association, 1961).

[10]Alberta School Trustees, Report to the Royal Commission, (Edmonton, Alberta: Queen's Printer, 1958).

given in a week's time, with the addition of three facts which were not covered by the concert. The instructions to the teachers were vague--"to make such use of the notes as you think fit . . . ." The number of correct responses by the students to the questions on these facts, and the apparent use made of the notes by the teachers indicates that little constructive use was made of them. This is closely allied to the findings of a research project carried out in 1965 by Kong and McMurray[11] in which a communication advocating educational change was issued with no authority given for its authorship, nor any instructions given as to its intended or proposed use. Further, the teachers were not warned of the possibility of this being part of the experiment. All this was mirrored in the present study, and the findings of the two experiments are very similar. Kong found that comparisons between the two groups of teachers (the responders and the non-responders) revealed that age, experience, and method of receipt of the message made no difference to its adoption rate. Using the criteria which he established, only about twenty-one per cent of the tested teachers were determined as responders. The remainder either could not remember two of the five topics mentioned, or had not put the proposals into use. The precedent for the issuing of notes without instructions for their use, and for examining the extent of the use made of the notes, is clearly established by the Kong study.

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[11] S. L. Kong and J. G. McMurray, "Teacher reaction to a communication advocating educational change," Canadian Education and Research Digest, (December, 1965), p. 285.

Summary

Research has been reported which represents a sample of all that is available, which seems to the researcher to be the most pertinent and which is the most current. It is logical to presume that such research will have made use of any significant earlier findings, and have incorporated them. To quote more extensively and from earlier work would lead to redundancy. There are many studies on personality and achievement, on musicality, on musical activity and the drop-out ratio, all of which are so peripheral to the study that they do not add any information apart from a general interest. These have been deliberately omitted. As a result of the survey of the literature, it was considered to be appropriate to include sex differences and home-musical environment in the Edmonton study; precedent was also established for an examination of teacher behaviour. The literature is quite clear about the problems of effective analysis of socio-economic factors and also of the lack of concensus on the merits of teacher rating. Accordingly, these two factors were eliminated from this study.

CHAPTER III

DESIGN OF THE STUDY

The in-school music programme of the Edmonton Symphony Society, now in its fourth year, is expanding both in content and in audience exposure. This research was designed to examine the effect of one segment of the programme on its listeners. An identical presentation using a 13-piece orchestra conducted by the researcher was given to selected classes. This concert, planned realistically to reach the age and interest level of the students, centred around a demonstration of the instruments of the orchestra, their characteristics and their sounds.

Selection of Schools

Since the research was undertaken as an adjunct to the existing in-school series, the choice of schools was limited. In late August, 1967, the Edmonton Public School Board provided the Symphony Society with a list of forty elementary schools, the Edmonton Separate School Board provided a list of twenty schools and these were interlocked into a schedule of sixty concerts, with specific dates for these concerts. A decision was made to restrict the testing to grade six classes in the Edmonton Public School System. The testing started in January, 1968, and continued without interruption until the total sample of fourteen consecutive classes had been obtained. Thus, though not 'random' in a statistical sense, the sample was nevertheless uncontrolled by the researcher.

The Selection of Classes

The classes chosen were generally drawn in pairs from any one school. One of the classes was designated the control group, and the other the experimental group. A set of programme notes was left with the experimental group class teachers with recommendations for use as already mentioned on page 24.

The notes were given to alternate classes, unless the teacher refused them. This occurred twice, for an undetermined reason. Therefore, of the fourteen classes in the project, eight classes (1, 3, 5, 8, 10, 11, 12, 14) were left with notes and designated 'experimental,' with the remaining six classes (2, 4, 6, 7, 9, 13) designated 'control.' The final sample consisted of 345 students. There were 214 students in the experimental group and 131 in the control group.

The Test Instruments

The data required in order to test the hypotheses constructed for the study were: (a) the factual knowledge of the students before and after the presentation; (b) the attitude of the students before and after the presentation; (c) the orientation of the parents towards music and music education; (d) the academic achievement of the student; and (e) the sex of the student.

Data pertaining to academic achievement and sex of the student were contained in the records maintained by the schools. Permission was granted for the use of these data. In order to collect data for the remaining items, two questionnaires were constructed by the

researcher. One of the questionnaires was designed for the parents of the students being tested, and the second questionnaire was designed for the students.

Parent's Questionnaire. The parent's questionnaire (Appendix B) was sent via the student to the parents, and was intended to produce data from which the home musical environment could be determined. The questions were developed on a deliberately broad base. Though the marking was very subjective the returns seemed to fall into a pattern. The questions attempted to examine the use of the facilities in the home, and the listening and concert-going habits of the parents. The establishment of a norm to evaluate home-musical environment implies a value judgement by the researcher. For the purpose of this study serious music was considered to be the norm, though a folk-singing family could be equally musical when judged by differing criteria. In this case the marking was dictated by the stated musical preferences of the parents. For example, a home possessing a record-player, radio and T.V. but claiming that T.V. was used most and that Country and Western music was the favourite was not rated as being a conducive environment. However, a similar home that listens mainly to radio, and claiming 'serious' music as a preference, was considered to be probably more conducive. Similarly, attendance at concerts was not rated positively when these were stated to be the more popular road-show attraction of touring rock-and-roll or Country and Western groups. Thus, the well-known problem of respondents giving the answers which they feel will enhance their

own status was slightly mitigated by the cross marking, and also by the covering letter which implied an attempt to alter the concert-content to meet the student's background. There seems to be no realistic way of checking the responses for verity; the only defensible comment is that judging from the number of responses the parents show a genuine concern and interest.

The Student's Questionnaire. The student's questionnaire was devised by the researcher and attempted to determine the student's factual knowledge and to assess the student's attitude towards 'serious' music. Administering the questionnaire before and after the presentation produced parallel data with any differences being attributable to the presentation for the control group, and to the presentation-plus-notes for the experimental group.

The students' factual knowledge was assessed by the responses to fourteen questions, each with only one correct response. In every case the last response was a 'don't know' category. These questions dealing with specific facts were divided between the strings (A violin bow is made of wood and (a) plastic, (b) catgut, (c) horsehair, (d) don't know), the woodwind (The bassoon reed is the smallest of all the reeds; (a) true, (b) false, (c) don't know), the brass (The trumpet was greatly improved by (a) bell joint (b) valves (c) silver mouth piece (d) don't know) and the percussion; (Which percussion instrument can be tuned? (a) glockenspiel, (b) cymbal (c) triangle, (d) don't know). Care was taken to eliminate possible ambiguity from the questionnaire. Appendix A shows the full questionnaire,

including the three historical questions which were only present in the program-notes. With these three exceptions all the questions were fully covered in the presentation.

The second part of the questionnaire attempted to determine the student's response to his past musical experience, and to establish his attitude towards music. The following questions relating to his past concert-going experience and to his past school music lessons were constructed. Responses were to be made on a continuum of 'none' through 'a little' to 'a lot.'

15. I have never attended a concert in the past

    (a) true
    (b) false

19. My favourite instrument is

    (a) a string instrument
    (b) a woodwind
    (c) a percussion
    (d) another instrument

20. Did you have music lessons in school through grades 4, 5 and 6?

    (a) not at all
    (b) a little in some grades
    (c) a lot in some grades
    (d) a lot in all grades

The response to the above questions remained the same in both pre- and post-concert questionnaires.

Marked along the same kind of continuum were the four questions selected to determine attitude. At the grade six level attitudes towards music are so unsophisticated that definite responses can be expected towards unambiguous questions. These questions were:

16. Would you like to attend a concert?

(a) not at all
(b) wouldn't mind
(c) like to very much

17. Serious music interests me

(a) not at all
(b) a little
(c) very much

18. I would like to play an instrument

(a) not at all
(b) wouldn't mind
(c) would like to

21. My favourite kind of music is

(a) Symphonic
(b) Ballet
(c) light music and pop
(d) rock and roll, Country and Western.

The questions were deliberately simply stated to determine if any change of attitude was registered in these fundamental areas as a result of the presentation. The desire to hear more of the same kind of music, to play an instrument, or to consider a change of musical interest were all deemed to be indicative of some impact by the presentation.

Administration of the test instruments

The students were given a careful explanation of the aims of the research. They fully understood that the tests were not related to their school marks and that their test sheets were anonymous. They were encouraged to feel completely free and to be truthful with their answers, and if in any doubt, to choose the 'don't know' category rather than to take a 'wild guess.' Although the probability

of guesses could be accommodated statistically, it was considered that this procedure would produce more accurate data. There is no clear way of knowing how many of the students took the message literally, but it is significant that, in the three questions that were deliberately inserted into the notes but not into the program, of 131 students in the control group who could not be expected to know these answers, 23 students attempted the second question, and none attempted the third question. This is so far from the one-third probability, that it seems certain that the students did not try to 'out-guess' the questionnaire.

Collection of Data

About a week before each concert was due to take place, the questionnaire was administered to the classes by the researcher. The concert was given to the students of both groups simultaneously, followed by the usual five minute question period. Following the concert, the same questionnaire was again administered. Since it was imperative that the response time be the same, the classroom teacher administered the post-test, enabling all students to write within one half-hour of the concert.

The responses were marked by an optical scorer, which produced IBM cards with the data scored. These data were analyzed by the IBM 360 computer using a variety of programs as described in Chapter IV of this thesis.

CHAPTER IV

DATA

This chapter will present a description of the sample and examine the hypotheses in the order in which they were presented in Chapter I. The relevant data will be presented in table form and findings will be presented in the relevant sections as a statement of the validity of the original hypotheses, with the amplification and recommendations being presented in the final chapter.

Description of the Sample

The sample consisted of 370 students comprising fourteen grade six classrooms in the Edmonton Public School System. These classrooms were the first classes scheduled to hear the Edmonton Symphony Orchestra's presentation after January 1, 1968. The schedule was made up four months earlier by the School Board Central Office staff, with no fore-knowledge of this research. Thus, through arbitrary and unconnected decisions by two unrelated organizations the sample was chosen, and although it was not random in the statistical sense, it seemed likely to be representative of the total population. It was not possible to check very carefully on this presumption, since no data on the whole of the Edmonton population were available, but certain checks on the sample were made. The classroom teachers were asked to report on the academic achievement of the selected students. All children in these grades in Edmonton are on the 'continuous progress plan' and as such the teachers were able to score each

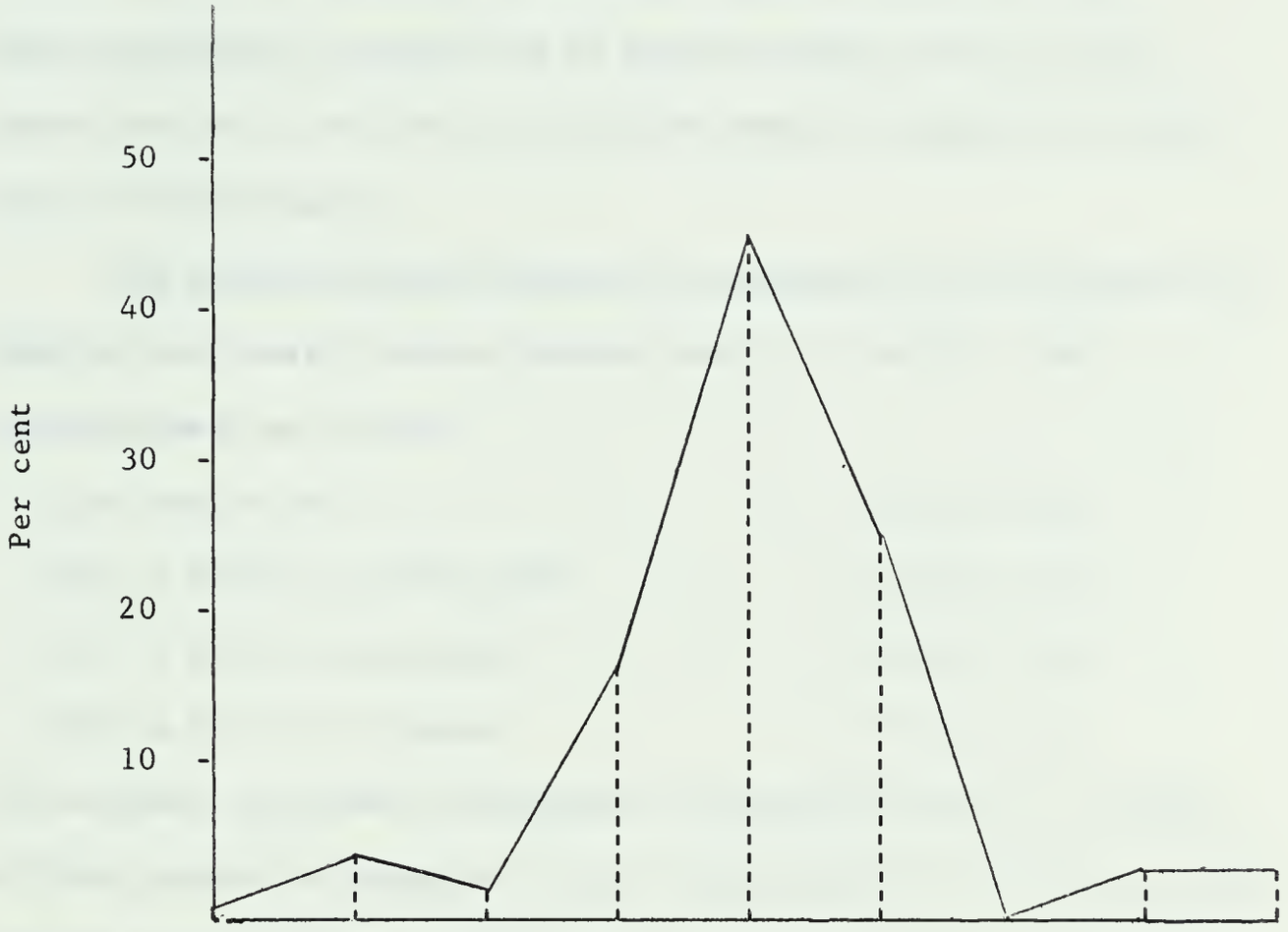
student as being a high, medium or low achiever in the five, six or seven-year program. It was found that there was no regular pattern of distribution by achievement in the classes; in some schools the principals had established a streaming of all high achievers, whereas other schools were completely heterogeneous in every class. To gain an idea of the distribution of the sample, the range of achievement was reduced to a nine point scale.

Seven-year plan	low	1
	medium	2
	high	3
Six-year plan	low	4
	medium	5
	high	6
Five-year plan	low	7
	medium	8
	high	9

Figure 1 shows that the achievement scores follow a typical bell-curve, and may therefore be considered to be a 'normal' sample.

Two student response items were examined to determine whether the sample had a very pronounced and therefore unusual musical experience. Again, there are no figures of the total population with which to compare these findings, and personal experience and probabilities had to be substituted for empirical proof.

The first item examined was question 15, "I have never attended a concert." The respondees were almost equally divided.



* Nine-point scale of academic achievement
** Percentage of total sample

FIGURE I

DISTRIBUTION OF TOTAL SAMPLE BY
STUDENT ACHIEVEMENT

Forty-four per cent reported that they had been to a concert in the past whilst the remainder claimed that they had never been to a concert. There is no way of knowing how this compares with the total population; all that can be stated is that not all of the sample were in a position to claim that they were musically experienced in concert-going.

The second student response item examined was to the question "Did you have music lessons through grade 4, 5 and 6?" The responses were as follows:

(a) not at all .. .. 23.5 per cent

(b) a little in some grades .. .. 31.0 per cent

(c) a lot in some grades .. .. .. 26.0 per cent

(d) a lot in all grades .. .. .. 18.5 per cent

The evenness of spread is remarkable, especially since all students in these grades are supposed to have ninety minutes of music per week, and the recent Coultas study[1] in Alberta revealed that there had been no real alteration in the pattern over the last few years. Very definitely the sample was not notably well oriented musically when judged by its past musical experience.

Having considered the possibility that the total sample was not in any way musically exceptional and deciding that it was probably representative of the total school population, the researcher divided the sample into two groups using the criteria described in

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[1]D. Coultas, "Organization of Music Education in Alberta," (Unpublished Master of Education Thesis, University of Alberta, 1965).

Chapter III, and designated them 'control' and 'experimental.'

All the above data were obtained using the total selection of the sample. At this point in the analyses the responses of students who had missed either of the testing sessions were discarded, leaving a total of 131 in the control group and 214 in the experimental group.

Control versus Experimental Groups: The Programme Notes. The data were examined for information on the teachers' use of the notes. These notes contained three questions the answers to which were available only through the notes. These were well out of the probable range of a normal grade 6 child's experience. During the concert no mention was made of these particular questions at all, which were:

9. The symphony orchestra as we know it came into existence about:

   (a) 1550 A.D.

   (b) 1750 A.D.

   (c) 1825 A.D.

   (d) don't know

13. The 'father' of the orchestra is usually considered to be:

   (a) Handel

   (b) Haydn

   (c) Hindemith

   (d) don't know

14. The birthplace of the orchestra is usually considered to be:

(a) Maintz

(b) Mannheim

(c) Manchester

(d) don't know

When the teachers were given the notes, they were not instructed as to their use--simply to use them as they saw fit. Nor did they know that these three questions were not to be covered in the concert. The findings of an examination of the results of the answers to these three questions almost exactly replicate the findings of Kong[2] as reported in the related research. Table I shows the number of correct responses to the questions. An examination of the experimental group student responses to these three questions (Table I) shows a range of success from 9 per cent (class 5) to 43 per cent (class 11). These percentiles of correct responses are not reliable indicators of teacher behaviour, and defensible conclusions cannot be made on the basis of such suspect data, despite the wide range of pupil behaviour.

Findings from the Factual Questions

The three questions discussed above were removed from the scores of the two groups. Any comparison would have been invalid

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[2]S. L. Kong and J. G. McMurray, "Teacher reaction to a communication advocating educational change," Canadian Education and Research Digest, (December, 1965), p. 285.

TABLE I

FREQUENCY OF CORRECT RESPONSES TO THE THREE SPECIAL QUESTIONS ON THE PROGRAM NOTES

Class	Responses Possible	Responses Actual	Questions 9	Questions 13	Questions 14
Experimental Group					
1 (N=29)	87	32 (37%)	15	6	11
3 (N=25)	75	30 (40%)	9	15	6
5 (N=22)	66	6 (9%)	3	2	1
8 (N=27)	81	17 (21%)	6	8	3
10 (N=33)	99	31 (31%)	19	5	7
11 (N=35)	105	45 (43%)	15	7	23
12 (N=25)	75	13 (17%)	1	9	13
14 (N=26)	78	16 (21%)	7	2	7
Control Group					
2 (N=22)	66	4 (6%)	4	-	-
4 (N=26)	78	6 (7.5%)	4	2	-
6 (N=19)	57	9 (16%)	3	6	-
7 (N=24)	72	9 (12.5%)	5	4	-
9 (N=27)	81	11 (13.6%)	5	6	-
13 (N=18)	54	3 (5.5%)	2	1	-

if these had been allowed to remain in the one group and not in the other. Thereafter, the factual questions remaining on the questionnaire were scored, and the mean scores of the two groups were compared.

Table II compares the pre- and post-test mean scores of the two groups, using repeated measures,[3] and as the enormous F ratios indicate, there was a positive variance between the two scores in both groups. This proves conclusively that learning took place in the time between the pre-test and the post-test. The first hypothesis that the concert can act as a teaching vehicle was proved to be sound.

The second hypothesis was that the use of programme notes would aid learning. If this were so, the experimental group should have had scores which were not significantly different from those of the control group at the pre-test level, but positively greater at the post-test level. Table III reveals that at both levels, the groups' mean scores were not significantly different. The hypothesis was not proved to be accurate, since the provision of the programme notes made no discernable significance to the final mean score.

Findings from the Attitude Responses

The second part of the questionnaire concerned itself with attitude shift. (From the viewpoint of the sponsors of the series,

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[3]B. J. Winer, Statistical Principles in Experimental Design, (New York: McGraw Hill & Co., 1962).

TABLE II

ONE-WAY ANALYSIS OF VARIANCE: THE MEAN SCORES BY GROUPS ON THE FACTUAL QUESTIONS (PART I OF THE QUESTIONNAIRE)

	Means			
	Pre-test	Post-test	F ratio	P
Control Group	4.69	6.89	113.50	0.0
Experimental Group	4.89	7.45	224.79	0.0

In both groups, the change from pre- to post-concert test mean is significant, and positive.

TABLE III

ONE-WAY ANALYSIS OF VARIANCE: CONTROL GROUP VERSUS THE EXPERIMENTAL GROUP AT THE PRE- AND POST-CONCERT TEST LEVELS

	Control	Experimental	F ratio	P
Pre-test mean	4.69	4.89	0.02	0.89
Post-test mean	6.89	7.45	0.51	0.48

At both the pre- and post-concert test levels, the difference between the two groups is not significant.

this is the most important area since they are concerned with future audiences and with pupil enrichment.) Four specific questions were considered to be revealing of pupil attitude, and each of these questions had a negative to positive continuum. Thus it was possible to score these questions not as 'right' and 'wrong' but as 'more interested' and 'less interested.' These questions were:

16. Would you like to attend a Symphony Concert?

17. Serious music interests me:

18. I would like to play an instrument:

21. Place in order, best first, the kinds of music you prefer to listen to:

The third hypothesis stated that the concert would affect student attitude positively. The Wilcoxon Matched-pairs signed-ranks test[4] was carried out to determine whether there were any significant differences between the pre- and post-test attitude scores of the total sample as registered in the sum of the scores to these questions. Table IV shows a high correlation between the noted responses, which indicates that there was not a significant shift of attitude between the pre-test and post-test scores. One concert, such as this, made little difference to the reported attitude, and the hypothesis was not proved to be correct.

The Kolmogorov-Smirnoff two-sample test[5] was carried out to

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[4] Seigal, Non-Parametric Statistics for the Behavioral Sciences, (New York: McGraw Hill & Co., 1956), pp. 127-128.

[5] Ibid.

TABLE IV

CORRELATION OF ATTITUDE SCORES (PRE- AND POST-CONCERT TEST RESULTS)

	Correlation	T factor*
Spearman Rank Correlations		
Pre-concert score** with Post-concert score	0.67	18.08
Individual question correlations		
Question 16. (I would like to attend a concert)		
Pre-with post-	0.46	9.50
Question 17. (Serious music interests me)		
Pre-with post-	0.59	13.61
Question 18. (I would like to play an instrument)		
Pre-with post-	0.71	18.46
Question 21. (My favourite music is . . .)		
Pre-with post-	0.67	16.64

*Significance = $\pm$ 1.96
**Score = total score from Q's 16, 17, 18, and 21

compare the experimental group attitude responses with the control group attitude responses to test for significant differences in the pattern of responses. A further comparison, using the Wilcoxon test[6] was carried out to compare the pre-test and post-test responses within each group.

Table V summarizes the findings. The Kolmogorov-Smirnoff test results, as represented by the chi-square computations validates the findings of the Wilcoxon test that one concert does not affect attitudes, since all the chi-squares are below the level of significance. The Wilcoxon Matched-pairs test results, as represented by the Z scores reveals from the mean scores of the two groups that the attitudes were comparable in both the pre-and the post-concert tests. This indicates that the notes presented to the experimental groups were ineffectual in helping attitude change.

The comparison of pre- and post-concert test scores within each group reveals two irregular and unexpected differences between the groups which can only be explained by presumption.

The first irregularity was in response to question 18, ("I would like to play an instrument"). There was a significant shift present in the experimental group, but not in the control group. This whole question must be viewed with suspicion, however, since the final response shows inconsistency. Response (d) in this

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[6] Ibid., pp. 75-76

TABLE V

FREQUENCY OF RESPONSES TO THE FOUR ATTITUDE QUESTIONS (DISTRIBUTION CONTRASTS, AND WILCOXON MATCHED PAIRS TEST)

	Control					Experimental			
Response**	1	2	3	4	Chi square*	1	2	3	4
Question 16. (I would like to attend a concert:)									
Pre-	15	42	74		0.64	15	72	127	
Post-	6	42	83		0.95	12	77	125	
	***Z = -1.88					Z = -0.01			
Question 17. (Serious music interests me:)									
Pre-	24	67	40		0.37	32	120	62	
Post-	20	78	33		0.42	25	131	58	
	Z = -0.13					Z = 0.33			
Question 18. (I would like to play an instrument:)									
Pre-	14	18	38	61	0.49	21	25	60	108
Post-	9	24	39	59	0.28	21	35	63	95
	Z = -0.32					Z = -1.96			
Question 21. (My favourite music is:)									
Pre-	97	16	5	13	2.42	140	48	13	13
Post-	88	13	4	26	3.91	140	42	13	19
	Z = 37.50					Z = -1.03			

*At a .05 level, the chi-square is significant at 5.99 (Seigal, p. 127)

**All responses are considered progressively more conducive when read from left to right

***Significance of Z = 1.96 (Seigal, p. 247)

question was "I already do play an instrument." There should be no differences between the two tests in this response. In both groups, there was a drop in total responses. It must be assumed that the students who changed this response (two in the control group, and thirteen in the experimental) did so for one of two possible reasons: (a) the instrument they play was not represented (i.e. accordion), and misunderstanding about the definition of 'instrument' arose and (b) the enthusiasm for the concert, or hurrying to finish the questionnaire in time led the student to make an earlier (but in every case more positive) response. The "don't care to" response remained constant in the experimental group, and declined in the control group, leaving the 'gained' responses in the "wouldn't mind," and "would like to a lot" categories.

The second irregularity occurred in the responses to question 21 ("My favourite music is . . ."), and provided the most puzzling responses in the series. There was a very significant difference between the pre- and post-test attitude in the control group. In terms of the actual number of responses in the control group, a very remarkable alteration occurred in the shift of attitude towards 'most conducive' response. Out of a population of 131, the response improved positively from thirteen (10 per cent) to twenty-six (20 per cent). There may also be some implications in the fact that the control group, who should have had more awareness of the material, and therefore more enthusiasm for the material, showed a considerably

smaller increase on this response. Out of a population of 214, the increase was from 6.5 per cent to 8.92 per cent.

Home Musical Environment

A questionnaire was sent to all the parents via the children (see Appendix B) and over 71 per cent of the questionnaires were returned. This in itself speaks very highly for the concern of the parents with their children's education. It was not intended that these questionnaires would supply data for a major part of the study, and they were all marked along very broad lines in an attempt to categorize the home musical environment as being conducive to symphonic music to a greater or lesser degree. All the responses were reduced to a five point scale, with points being 'awarded' for: (1) attendance at concerts when the favourite type of music was declared to be 'serious'; (2) for an enthusiasm for their child to be able to take lessons in music; (3) for a desire to see a more active music programme; (4) for concert going habits; and (5) home listening habits (records or radio) when the stated preference was for serious music. This resulted in a very subjective description of the home musical environment, and could only be justified in the wide spread of possibility in the simple five point scale. These results were not in any real way statistically defensible but served at least to give an over-view of a probable area of inquiry. The frequency of responses, as shown in Table VI, indicates that relatively few home environments were considered to be conducive.

TABLE VI

FREQUENCY OF RESPONSES: CONDUCIVENESS OF HOME MUSICAL ENVIRONMENT TO 'SERIOUS' MUSIC

	Rating	No. of Responses
(Least conducive)	1	67
	2	62
	3	45
	4	45
(Most conducive)	5	38
Total Responses		257 (71.7%)

The Spearman rank correlation test[7] was used to determine whether there was a significant relationship between home musical environment and attitude scores. The home musical environment, as indicated by the parents' responses to the questionnaire (Appendix B) were checked against the student's pre- and post-concert attitude 'score.'

The findings reported in Table VII are for the total sample, and reveal a very pertinent point of interest. There is an indicated significance between the pre-concert attitude and the home environment. Both were scored on a negative-to-positive continuum, and the indication is that there is a significant correlation between the high attitude achievers and the more musically conducive homes. This correlation falls below the level of significance at the post-concert level, indicating that a change has taken place. Home environment was presumed to have remained constant between the two tests, so the change is directly attributable to the presentation, as a result of which the influence of the home environment is less significant. This implies that: (1) there is a more positive reaction towards music by the students from the lower category homes, or (2) there is a less positive reaction towards music by the students from the homes having a more conducive environment. In both cases, this is solely due to the presentation. The frequency of the relevant

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[7]G. A. Ferguson, Statistical Analysis in Psychology and Education, (New York: McGraw Hill & Co., 1959), pp. 179-183.

TABLE VII

CORRELATION OF THE TOTAL SAMPLE'S MEAN ATTITUDE SCORE WITH HOME MUSICAL ENVIRONMENT

	Correlation	*t-factor
Pre-concert attitude with home-environment	0.11	2.04
Post-concert attitude with home-environment	0.10	1.79
Constituent question correlations		
Question 16. (I would like to attend a concert. . .)		
Pre-concert attitude and home-environment	0.27	0.49
Post-concert attitude and home-environment	0.04	0.78
Question 17. (Serious music interests me. . .)		
Pre-concert attitude and home-environment	0.06	1.19
Post-concert attitude and home-environment	0.06	1.11
Question 18. (I would like to play an instrument. . .)		
Pre-concert attitude and home-environment	0.09	1.70
Post-concert attitude and home-environment	0.06	1.16
Question 21. (My favourite kind of music is. . .)		
Pre-concert attitude and home-environment	0.02	0.43
Post-concert attitude and home-environment	0.08	1.47

*Significance at the 0.05 level is $\pm$ 1.96

responses as shown in Table V imply that the former is the case. This is of the greatest significance for the sponsors of school concerts for it implies that there is a positive contribution to be made by such concerts to student attitude. On the basis of the sample chosen, and of the data presented, the fourth hypothesis was accepted. Home musical environment has a significant effect on student attitude towards music, but this effect is partially countered positively by even one presentation.

Table VII also shows the breakdown of the total sample's mean score into the four constituent questions, none of which proved to have significance in its own right. Table VIII shows the breakdown of mean score and constituent questions by groups; no question in either group proved to be solely responsible for the weighting, implying that all the questions contributed fairly to the attitude inquiry.

Student Academic Achievement

The fifth hypothesis postulated a correlation between a positive attitude in the post-concert test and a high academic achievement. Since the appraisal of music and of sounds is a mental activity, the probability of early acceptance and of change will likely be more apparent in the students who possess a keener mental ability. Using the Spearman rank correlation test, the academic achievement as measured by the school was matched with the attitude responses. The total sample was examined, both by mean and by constituent scores (Table IX), and the two groups were also examined

TABLE VIII

CORRELATION OF THE TWO GROUPS' MEAN ATTITUDE SCORES WITH HOME MUSICAL ENVIRONMENT

	Control		Experimental	
	Correlation	*t-factor	Correlation	*t-factor
Pre-concert attitude with home environment	0.06	0.70	0.13	1.92
Post-concert attitude with home environment	0.09	1.08	0.09	1.39
Constituent question correlations				
Question 16. (I would like to attend a concert. . .)				
Pre-concert attitude with home environment	0.09	1.01	-0.02	-0.23
Post-concert attitude with home environment	0.17	1.92	-0.29	-0.02
Question 17. (Serious music interests me. . .)				
Pre-concert attitude with home environment	0.06	0.74	0.06	0.96
Post-concert attitude with home environment	0.07	0.89	0.61	0.04
Question 18. (I would like to play an instrument. . .)				
Pre-concert attitude with home environment	0.06	0.68	0.11	1.57
Post-concert attitude with home environment	0.05	0.53	1.05	0.07
Question 21. (My favourite kind of music is. . .)				
Pre-concert attitude with home environment	-0.16	-1.83	0.10	1.45
Post-concert attitude with home environment	-0.13	-1.49	2.40	0.16

*Significance at the 0.05 level = $\pm$ 1.96

TABLE IX

CORRELATION OF THE TOTAL SAMPLE'S MEAN ATTITUDE SCORE WITH ACADEMIC ACHIEVEMENT

	Correlation	*t-factor
Pre-concert attitude with academic achievement	0.05	0.98
Post-concert attitude with academic achievement	0.11	1.98
Constituent question correlations		
Question 16. (I would like to attend a concert. . .)		
Pre-concert attitude with academic achievement	-0.03	-0.55
Post-concert attitude with academic achievement	0.05	0.87
Question 17. (Serious music interests me. . .)		
Pre-concert attitude with academic achievement	-0.01	-0.28
Post-concert attitude with academic achievement	0.01	0.16
Question 18. (I would like to play an instrument. . .)		
Pre-concert attitude with academic achievement	0.06	1.17
Post-concert attitude with academic achievement	0.08	1.44
Question 21. (My favourite kind of music is. . .)		
Pre-concert attitude with academic achievement	0.14	2.62
Post-concert attitude with academic achievement	0.16	3.03

*Significance at the .05 level is $\pm$ 1.96

separately by mean and constituent scores (Table X). The achievement factor was constant throughout the testing period. As in the home-musical environment analysis, the post-concert results were examined, and as these proved to be significant, the pre-test scores were also examined. Thus a positive correlation at any point could be traced to: (1) the concert for the post-test control group; (2) the concert-plus-notes for the post-test experimental group, or (3) earlier undetermined factors for either groups' pre-test score.

The mean score of the total sample was found to be significant at the post-concert level, but not at the pre-concert level. Thus, as hypothesized, there is a significant and positive correlation between change of attitude and a student's academic achievement which is directly attributable to the presentation. Further inquiry revealed that of the four questions selected for analysis, the only significance was found in the responses to the fourth question, and this at both pre- and post-concert levels. Although the post-concert score was greater than the pre-concert score, the presentation could not claim sole credit for change in this case, since a significant correlation was clearly established before the presentation took place. The responses to the fourth question were examined by groups to determine whether either group was solely responsible for the change (Table X). The mean scores show that neither group was significant at the post-concert level. Question four revealed the same pattern of responses as the total sample responses. There was a gain in both groups; the control group post-concert score was

TABLE X

CORRELATION OF THE TWO GROUPS' MEAN ATTITUDE SCORES WITH ACADEMIC ACHIEVEMENT

	Control		Experimental	
	Correlation	*t-factor	Correlation	*t-factor
Pre-concert attitude with academic achievement	0.03	0.30	0.07	1.05
Post-concert attitude with academic achievement	0.16	1.89	0.09	1.28
Constituent question correlations				
Question 16. (I would like to attend a concert. . .)				
Pre-concert attitude with academic achievement	-0.07	-0.77	-0.02	-0.36
Post-concert attitude with academic achievement	0.19	2.16	-0.00	-0.06
Question 17. (Serious music interests me. . .)				
Pre-concert attitude with academic achievement	0.01	0.10	-0.01	-0.14
Post-concert attitude with academic achievement	0.00	0.05	0.01	0.18
Question 18. (I would like to play an instrument. . .)				
Pre-concert attitude with academic achievement	0.06	0.75	0.07	1.07
Post-concert attitude with academic achievement	0.15	1.76	0.05	0.72
Question 21. (My favourite kind of music is. .)				
Pre-concert attitude with academic achievement	0.09	1.05	0.14	2.13
Post-concert attitude with academic achievement	0.14	1.60	0.15	2.26

Significance at the .05 level is $\pm$ 1.96

significant in both the pre- and post-concert tests.

The only other response of significance was in answer to question 16, where the control group post-concert response showed significance. This is explained by the pattern of responses as shown in Table V. The control group figures show an upward (positive) shift of nine responses from the lowest category to the highest, with the median response remaining constant. The experimental group responses show an upward shift to the median of three responses, and a downward shift to the median of two responses, thus virtually neutralizing the direction of change. The post-concert control group correlation in Table XI corroborates this; the chi-square in Table V shows that this shift of responses is not significant to the total attitude score. The fifth hypothesis that academic achievement has an effect on attitudes was shown to be correct on the basis of the questions chosen, but only because of the inclusion of question 16, and then barely so. It is well possible that a different criteria for preparing the questions would have produced differing results.

The Sex Factor

The sixth and final hypothesis postulated that sex would be a factor affecting both the factual learning and the attitude responses, girls being predicted to be superior to boys. The data for the inquiry are divided between the two parts of the questionnaire, the factual section and the attitude section. Using two-way analyses of variance, Table XI compares the factual scores by sexes and examines the relationship between the two scores, whilst Table XII compares

TABLE XI

TWO-WAY ANALYSIS OF VARIANCE: MEAN SCORES ON PART I OF QUESTIONNAIRE; CONTROL AND EXPERIMENTAL; MALE AND FEMALE

Pre-concert differences: (No. of students in parentheses)

	Control	Experimental	Group Mean	F ratio
Male	4.9 (69)	4.9 (99)	4.9 (168)	0.43
Female	4.8 (61)	4.7 (115)	4.8 (176)	(p=0.52)

Post-concert differences:

	Control	Experimental	Group Mean	F ratio
Male	7.4 (69)	7.4 (99)	7.4 (168)	3.24
Female	7.2 (61)	6.9 (115)	7.1 (176)	(p=0.07)

TABLE XII

TWO-WAY ANALYSIS OF VARIANCE: MEAN SCORES ON PART II OF QUESTIONNAIRE: ATTITUDE SCORES BY SEX CONTROL AND EXPERIMENTAL

Pre-concert differences: (No. of students in parentheses)

	Control	Experimental	Group Mean	F ratio
Male	1.75 (69)	1.76 (99)	1.75 (168)	6.35
Female	1.83 (61)	1.89 (115)	1.87 (176)	(p=0.01)

Post-concert differences:

	Control	Experimental	Group Mean	F ratio
Male	1.72 (69)	1.74 (99)	1.73 (168)	3.37
Female	1.80 (61)	1.84 (115)	1.82 (176)	(p-0.07)

the attitude scores in the same way. In both tables, the F ratio is high, whilst the probability factor is very low. This indicates that there is a high degree of similarity between the scores of the sexes which is well beyond the possibility of chance. It is apparent from the two tables that sex is not a significant factor in either the factual scores, or the attitude responses. The sixth hypothesis is not proved; girls do not show more receptivity towards music than boys.

CHAPTER V

CONCLUSIONS

I. SUMMARY OF THE PROCEDURE

The population, selected arbitrarily, consisted of a control group of 131, and an experimental group of 214. All of these students were in Grade 6 in the Edmonton Public School System, and all were presented with identical concerts played by thirteen professional musicians from the Edmonton Symphony Orchestra. A commentary, covering the identical material at each concert, was presented by the researcher. The conclusions were based on a comparison of responses to a questionnaire administered initially about a week before the concert, and then again within half an hour of the termination of the concert.

II. FINDINGS

Summary of the findings on Part I of the Questionnaire

The prime objective was to determine whether the concert in its present form could be considered a teaching vehicle. There was a significant increase in mean scores in both the control and the experimental groups in the post-test compared with the pre-test. This was well beyond the level of chance, implying that a concert presentation can teach.

The second question which this study attempted to answer was what effect the use of programme notes might have on learning.

Analysis of the data on this question shows that there was no significant difference between the control group and the experimental groups on the post-test scores (see Table III, page 42). This point has considerable implications. The only difference between the treatment of the two groups was the acceptance, and the presumed use, of the programme notes by the class teacher. As the table indicates, the experimental group's mean score was not significantly higher than the control group's mean score. Therefore, the hypothesis that the notes would improve receptivity of, and preparedness for the concert, was not confirmed by the data. Any explanation that could be offered does not mitigate this fact. The teacher may have deliberately missed out the "non-musical" questions as earlier suggested, but these questions were excluded in the computation of the mean scores. The notes may have been too dull, too academic, unrealistic for this age group, or not used by the teacher. This latter possibility would seem to be the most likely conclusion to be drawn from an examination of the correct responses to the special questions as shown in Table I on page 39. Whatever the explanation offered, these notes did not affect the scores.

This correlates highly with the conclusions reached by Kong[1] in his North York experiment in communication.

The most important conclusion reported by Kong has the same

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[1]S. L. Kong and J. G. McMurray, "Teacher reaction to a communication advocating educational change," Canadian Education and Research Digest, (December, 1965), p. 285.

significance for this study as for his. This was that the mass-media places great stress on getting the message physically to the receivers, yet few respond. The implication is that more work is needed in re-inforcing the message. The status of the sender seems irrelevant, but that of the reinforcer seems significant. "Mass media tends to inform, and personal contacts to legitimize."[2]

Kong's relevant recommendations were:

1. Prepare the teachers in advance by directing their attentions to the focal points.

2. Convey the message through a personal channel, and encourage the conveyer to add his own pro-arguments.

3. Stimulate new concepts of teaching in schools. Professional guidance is effective when there is a need for it.

As the researcher's programme notes did not produce results and as Kong has found that unsolicited notes given without guidance do not help because of lack of acceptance, an altered approach for the future is indicated. Any notes which may be contemplated for a 'series' must be explained, directed to, and wanted by the teachers, if a satisfactory use is going to be made of them. The problem of motivating the teaching force to this extent was beyond the scope of this research.

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[2] Ibid.

Summary of the findings on Part II of the Questionnaire

The second objective of this inquiry was to determine whether the concerts affected the attitudes of the students. The concert proved to have no significant effect on the mean 'scores' in this category. The conclusion must be drawn that there was no significant alteration of attitude in either group to indicate a more positive attraction to 'serious' music. In view of the research reported by Dolph this is not especially surprising, and may be accounted for on three possible counts.

1. If Dolph is correct, it is too early to expect a shift of attitude to occur at the grade 6 level.

2. The test instrument did not fully explore attitude shift, since only basic trends were sought, rather than a detailed attitude profile.

3. The concert, being concerned with a factual demonstration of the instruments, did not really deal with 'serious' music per-se; therefore, it may be considered most unrealistic to expect a shift of attitude about music to take place.

This latter possibility is most probable. However, Van Vactor, in covering the whole range of student age groups found, much as Table V, page 46 reveals, that there was a slight shift of attitude, but of no statistical significance. It must also be stated that on a non-statistical basis, the feed-back of enthusiasm from the students and from the teachers is most rewarding. The programmes do have an impact that the statistics do not reflect. Several variables

were also examined to determine if these had any significant effect.

Home Musical Environment

Matching the home musical environment of the student with his attitude responses clearly indicates that there is a real and measurable effect of the home on the basic pre-presentation attitude (Table VII, page 51). Generally the more conducive the home the more favourable the student attitude. The correlation changes after the presentation, however, which implies that the presentation affects positively the attitude of the students from the less conducive homes. This change is slight but positive, resulting from only one presentation. It could be expected that more numerous presentations would affect attitudes to an even greater degree.

It is noteworthy that over 71 per cent of the questionnaires were returned. These were marked on a 5-point scale, which was deliberately arbitrary and produced only broad generalizations. Nevertheless, the spread of responses shows a quite definite lack in many of the homes of a 'musically-conducive' atmosphere.

Sex

Two-way analyses of variance were performed on both the pre-test and the post-test mean scores to both the factual (Section I) and the attitude (Section II) parts of the questionnaire, with sex as one of the factors. The results quite clearly indicate that at this grade level at least, sex does not significantly affect the group mean scores.

Student achievement

The data were not found to be sufficiently specific for a detailed analysis. Accordingly, the grouping of the academic achievement scores was made only on the basis of the placement of the child on the continuous progress plan.

Yet of all the variables considered, this was the only one in which a significance was noted. There was a significant correlation between the level of student achievement and the mean score on the post-test attitude questions. That academic excellence has a bearing on attitude change is a consideration of the greatest importance for music educators. The concept that music can only be appreciated by the academically gifted is indefensible, and unrealistic. The findings reported here, however, imply that there is probably a correlation between the amount of exposure necessary to affect attitude and academic excellence. In the process of attitude-shaping, as in the process of factual learning, the 'slow-learner' needs more time and exposure in order to realize his potential. These two factors might be considered to exist in inverse ratio to each other. This conclusion must remain speculative until more carefully controlled studies are undertaken to validate the position.

Teacher behaviour

The frequency of responses to the three special questions in the programme notes, as reported in Table I, page 39, indicate that less than half of the experimental groups' teachers used the notes to any great extent. The justification for the method of presenting

the notes, and the close parallel of these results to other research has already been noted and may be summarized as follows:

(a) Teachers will not generally use teaching material unless they can be convinced of its worth and of its purpose.

(b) Whilst the use of notes may impart facts, the notes have little or no positive effect on attitudes.

III. IMPLICATIONS FOR FURTHER RESEARCH

In a subject area as unresearched and unquestioned as is this one, every facet of enquiry becomes an arbitrary one of choice or convenience, leaving the alternate questions still unanswered. And before any firm decisions can be made, the "other-side-of-the-coin" questions must be considered.

Linder[3] makes a claim for the concert environment, (see Chapter I) and it seems probable that this could lead to a more intense emotional experience for the children, though not necessarily a more factual learning situation. If factual learning was consistently undertaken throughout the schools, then the use of the full orchestra in an "Adventures in Music" concert would be preferable. This must remain as speculation pending research, with the decision being left to the administrators. Research on this subject would have to make a very clear 'attitude' versus 'knowledge' differentiation in order to compare the two styles of presentation. At present

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[3]Mabel Linder, "Curtain Time," Clearing House, XXVII: 4 (December, 1952), pp. 212-3.

the sponsors are unable to assess the results achieved, since no research has been found to substantiate either viewpoint.

Having opted for an 'in-school' plan, concert sponsors should see the solutions to two related problems:

1. The use of thirteen players in a concert with instrumental demonstration as its objective, means that at any given moment twelve players sit while one instrument is demonstrated. At the same time, this complement of players makes it possible to play orchestral works, though on a reduced scale. From the point of view of attitude- response, the larger group may be better, but is wasteful if factual information is the prime concern. Visits under the same circumstances by various designated instrumental combinations should lead to a clearer understanding on the part of the students, (a) because in discussing only one orchestral family at a time, the topic can be adequately covered, instead of being rushed through as at present, and (b) the possibility of confusing instrument names would be considerably lessened, given a sufficient interval between presentations. Adequate programming could reinforce previous learning, and the work of the groups could be co-ordinated to make a presentation in depth. Such an approach, the validity of which has not been checked, leads to the second decision-area.

2. Because of the size of the Edmonton School System and administrative scheduling problems, it is possible to visit each child in Grades 4, 5, and 6 only once in every three years. Van

Vactor[4] claims that a minimum of four concerts is needed to influence attitude, though he cites no empirical proof of his assertion. If there is a case for presenting a series of concerts close together, because of the correlation of academic excellence and attitude it must be concluded that the frequency of the Edmonton concerts is inadequate for the needs of most children. Just what the optimum number of visits a group should make, and how much exposure to 'live' music children need, is open to speculation.

IV. SUMMARY

Enrichment experiences such as these concerts are, should fit into the school curriculum. If all of the schools did teach the subject matter which was presented in concerts, musicians would then be free to attempt to unveil the world of music for the children. However, the wide range of responses from the different schools shows that such is not generally the case. Yet the teachers' use of the programme notes creates grave doubts as to the dependability of the in-school teaching. Again, subjective value judgements are having to take the place of non-existent research. When such research is instigated, it will inevitably lead to a consideration of the objectives of the music program in schools, and then to the place of visiting musicians in this program. "Goals and values provide the

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[4]David Van Vactor, Every Child May Hear, (Tennessee: University of Tennessee Press, 1960).

sense of direction; research yields the data for charting the course."[5]

A current music-education philosophy[6] states emphatically that 'facts' should be taught as and when they are needed by the music at hand; and that to teach facts for the sake of facts is an undesirable concept. This presentation, however, presented and tested facts which, because of a vaguely defined school curriculum, did not necessarily have any relevance at all. Moreover, these facts were 'about' music, but not 'of' music. The facts could have been on any topic from history to architecture, and the findings would probably have been similar. The questionnaire, in reality, concerned itself solely with the verbal presentation and ignored the musical presentation. Any testing of the musical presentation would have had to presume that the students possessed testable listening skills. The attitude responses to the 'favourite music' question coupled with the poor responses on the factual questions indicates that most of the students do not have these skills.

A recent conference[7] stated that:

> The educational change appears to be growing stronger;

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[5] W. H. Worth, The Changing Curriculum in the Elementary Schools. Paper presented to the Forty-third Canadian Education Association, Vancouver, B.C., September, 1966.

[6] J. L. Mursell, Music Education, Principles and Programs, (New York: Silver Burdett Co., 1956).

[7] L. W. Downey, "Secondary Education: A Perspective," The Canadian Secondary School, (Toronto: W. J. Gage & Co., 1963), p. 1.

> secondary education may well be on the threshold of major innovation.
>
> But change is not an easy process. Frequently it is resisted by tradition. And when changes do occur they are often random and unrelated, rather than planned and systematic.

One can only hope that the field of music education is about to emulate these changing concepts, the most pertinent of which is in the area of foreign language instruction, until very recently concerned with the 'facts' rather than the 'sound' of the language. If future research and developments in music education lead in the same direction, we will have the tools with which to achieve our goals. Until music educators formulate these goals precisely, research will be forced to continue along its present unsatisfactory path of 'tinkering' with aspects of methodology. Forever the handmaiden of philosophy, research is powerless to do more than point out the weaknesses in empirical terms. The need for the establishment of consensus is imperative. Once acknowledged by administrators, new and concise objectives will be formulated, and research will again be free to move forward, assessing the level of achievement under these new concepts.

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APPENDICES

APPENDIX A

STUDENT'S LETTER AND QUESTIONNAIRE

Department of Secondary Education
University of Alberta
Edmonton
Winter, 1967

Dear Student:

As you know, the Edmonton Symphony Society and the School Board jointly sponsor a series of concerts in the schools each year, and this year we will be playing to your class. We know that the students enjoy the program if only because it is more fun than some other subjects! However, we would like to know more about your feelings, so that we can try to make the programs even better. Will you please help us to do this? We are asking about 500 students from our audiences this year to tell us something about themselves, and how they feel about our concert; we will then carefully look at the answers before we plan our future programs.

The questions we would like you to answer are on the next sheet, but please place your answers on the pink marking sheet that has been given out. These sheets will then be put through a machine at the University which will automatically count up the numbers of answers in each category. No one will know which answer belongs to which student, since you will not be asked for your name. The number at the top merely helps the machine to pair off your answers.

Thank you for helping us with this project. We feel sure that your careful answers will help us in our future work, and know that you will enjoy the concert.

Good luck,

G. C. Naylor,
for the EDMONTON SYMPHONY SOCIETY

Questionnaire

Instructions: Please mark all your answers on the pink sheet. That is the only sheet that will be marked. You should use a soft pencil only. Fill in your school's name, and your teacher's initials to identify the grade.

Section 1

1. In a symphony orchestra there are:

   (a) 4 families of instruments
   (b) 5 " " "
   (c) 6 " " "
   (d) don't know

2. A violin bow is made of wood and:

   (a) plastic
   (b) catgut
   (c) horsehair
   (d) don't know

3. A second violin is tuned lower than a first violin

   (a) true
   (b) false
   (c) don't know

4. The pitch of a string instrument depends upon:

   (a) how hard it is played
   (b) the tightness of the string
   (c) the size of the instrument
   (d) don't know

5. The largest section (by numbers of players) is:

   (a) the strings
   (b) the woodwinds
   (c) the percussion
   (d) don't know

6. The bassoon reed is the smallest of all the reeds:

(a) true
(b) false
(c) don't know

7. The woodwinds were greatly improved by:

(a) the use of plastic
(b) the key-work
(c) the shape of the bell
(d) don't know

8. The pitch of wind instruments depends upon:

(a) the size of the bell
(b) the amount of air blown
(c) the size of the tube
(d) don't know

9. The symphony orchestra as we know it came into existence about:

(a) 1550 A.D.
(b) 1750 A.D.
(c) 1825 A.D.
(d) don't know

10. Trumpets can play notes higher up the scale than french horns:

(a) true
(b) false
(c) don't know

11. The trumpet and french horn were greatly improved by the:

(a) bell joint
(b) valves
(c) silver mouthpiece
(d) don't know

12. Which percussion instrument can be tuned?

(a) glockenspiel
(b) cymbal
(c) triangle
(d) don't know

13. The 'father' of the orchestra is usually considered to be:

(a) Handel
(b) Haydn
(c) Hindemith
(d) don't know

14. The birthplace of the orchestra is usually considered to be:

(a) Maintz
(b) Mannheim
(c) Manchester
(d) don't know

Section 2

15. I have never attended a concert in the past:

(a) true
(b) false

16. Would you like to attend a symphony concert?

(a) not at all
(b) wouldn't mind
(c) would like to very much

17. Serious music interests me:

(a) not at all
(b) a little
(c) very much indeed

18. I would like to play an instrument:

(a) not at all
(b) wouldn't mind
(c) very much indeed
(d) already do play

19. My favourite instrument is:

(a) a string instrument
(b) a woodwind
(c) a percussion
(d) another instrument

20. Did you have music lessons in school through grades 4, 5, and 6?

(a) not at all
(b) a little in some grades
(c) a lot in some grades
(d) a lot in all grades

21, 22, 23 and 24. Place in order, best first, the kinds of music you prefer to listen to:

(a) symphony, concertos
(b) light classics, ballet, etc.
(c) Sinatra, Mancini, show music
(d) Rock, Country and Western, CHED, CFCW, CJCA

APPENDIX B

PARENTS' LETTER AND QUESTIONNAIRE

Department of Secondary Education
University of Alberta
Edmonton
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Dear Parent:

Will you please help us? As you may know, the Edmonton Symphony Society in conjunction with the School Board have been giving concerts in the schools for some years, and in about a week's time will be in your child's school. We are anxious to try to make our concerts as educational and as enjoyable as possible, and we have received school board permission to ask many of the children to fill out a question paper on their background and interest in music. In this way we hope for the first time to get an idea of just what the children feel about our work. Through this means we may be able to find some better way of giving our concerts and of helping the children to better understand music in its many forms.

It has been suggested that although we know little about the children, we know even less about the part that music plays in their homes. To help us build up a picture of this, I am taking the liberty of asking you to help by filling out the attached sheet and returning it to me. As you can see, there is no name required; the number on it is the same number as was given to your child on his paper, and will serve to let us pair off your reply with those answers until we get all the answers into the computer. All the questions have been cleared by the School Board, and your privacy is assured. We really believe that your answers will be of great help to us in our research and only by your ready response can we make use of your child's answers.

Please accept my thanks for your help.

Yours sincerely,

George C. Naylor

Parent's Questionnaire

Pupil's I.D. No. _____

Please simply mark, or check whatever is appropriate for your home.

1. In your home is there:

   (a) a radio
   (b) TV
   (c) a record player
   (d) a piano
   (e) any other instrument which is played regularly

2. Which is listened to most in your home:

   (a) radio
   (b) TV
   (c) records
   (d) live music

3. Do you or your husband play an instrument? _____
   Which one? _____

4. If it were possible, subject to time, instruments, practice, teachers, etc., would you like your child to learn to play an instrument? _____

5. Apart from your own child, do you think that it is a good thing for children to learn to play an instrument? _____

6. Did you learn to play as a child? _____
   Do you still play? _____
   How many years? _____
   Which instrument? _____
   If you dropped it, do you regret having not kept it up? _____

7. Do you think that music should be taught in schools (not only instrumental, but singing, and appreciation as well)?

   (a) more than it is now
   (b) less than it is now
   (c) about the same
   (d) differently . . . . can you say why or how?

8. What sort of music do you prefer to listen to most, on radio, TV, or records?

   (a) Folk and/or Country and Western
   (b) Jazz
   (c) Popular
   (d) Classical

9. Do you go to concerts with any regularity? _____
   Which type is your favourite?

   (a) Jazz
   (b) Symphony, Orchestral and Ballet
   (c) Country and Western--Gran' Ole Opry. .
   (d) Popular (Petula Clark, Ray Charles..)

APPENDIX C

THE PROGRAMME NOTES

THE ORCHESTRA

Although musicians have played together since pre-biblical times, it is only comparatively recently that they have formed any sort of regular grouping of instruments. As late as 1700, music was being written for "voices or viols . . ." and the voice part of any early work could just as well be taken by an instrument, if a singer was not available. Shortly after 1700, in the Baroque period of music, composers began to write music for specific instruments, and to expect that this music would only be played by that instrument. The demands that the composers made on the players (and so on the instruments) meant that from now on the voice was unable to substitute for an instrument, and as words became important, so the instruments could no longer substitute satisfactorily for the voice. The two became separate identities.

In Mannheim in Germany, the court of a prince had an orchestra, and this orchestra, though not a new idea, made a profound impression on all of the other musicians in Europe. These ideas were taken up by Joseph Haydn, who worked in a similar court for many years, and he raised the art of writing music for this combination - the orchestra - to a new level. He is sometimes called 'the father of the orchestra' which is not strictly true. He was the first man to really develop the orchestra however, and to point the way for later composers to follow.

The orchestra has further developed from that of Haydn, mainly by the addition of further instruments, many of which were not even invented in his time. However, by about 1750, the orchestra as we know it was in existence. Now all the groups of the instruments are represented at various times.

In the 'normal' orchestra such as the Edmonton Symphony Orchestra, there are four groups of instruments, called 'families' of instruments. And in each family there are basically four instruments. These families are grouped together because each instrument in the family makes its sound in the same way.

The first family which you will hear in the concert is the:

Woodwind

These instruments are basically hollow tubes (like a recorder) with holes in the tube which are covered by the players' fingers.

In all of our instruments, though, we expect our players to be able to do many things, to play many notes, trills, high sounds and lows, and so on all the instruments there is an involved system of keywork to aid the player to cover more holes than his bare fingers could cover.

In all of this family's instruments, the player blows out a plain blast of air, and the instrument makes the air vibrate. The FLUTE (and its little brother, the piccolo) has a hole in the side, and the air is blown over this hole (as over a bottle top) to produce the note. The CLARINET has a reed (a piece of bamboo cane shaved very thin at one end, and clamped onto the instrument, so that when the air is blown past the thin tip of the reed, it vibrates and causes the note to sound. The OBOE, and the BASSOON do the same thing, but here there are two pieces of cane and so cause the air between them to vibrate, and make a sound. So in every case, the instrument itself makes the vibrations which cause the sound, and the player merely pushes out a steady even stream of non-vibration air.

The woodwind instruments are:

1. The Flute
2. The Oboe
3. The Clarinet
4. The Bassoon

Brass

The next group of instruments makes their sound in exactly the opposite way - the player makes the air vibrate by 'buzzing' his lips, and the instrument merely gathers the vibrations in a cup-shaped mouthpiece and amplifies these sounds.

The four instruments in this family are:

1. The French Horn
2. The Trumpet
3. The Trombone
4. The Tuba

We have only the first three with us on this particular concert. All the instruments are made out of brass, but it is their method of sound production which links them together into a family. There are no holes in the tubes as in the woodwind family but the players alter the notes by a combination of two methods.

1. By slightly tightening or slackening their lips, the players can make separate notes. This is how a bugle makes its notes,

and the sounds are exactly those of bugle calls. However, these are not all the notes of the scale, and so the player has to use an extra technique to fill in the gaps.

2. He does this by using Valves, which are pistons or levers which allow the air in the tube to pass through a separate piece of tubing when the valve is depressed. This, in effect, makes the tube longer, just as the woodwind players made their tubes longer by closing or opening holes in the tube.

The Percussion are next, and this family encompasses anything that will make a noise by being hit. There are two main varieties of instruments here.

1. The instruments that make a definite note when struck; the various bells and glockenspiel, the tuneable drums (called the timpani), and the chimes are in this group. The piano (when used) also fits in here.

2. All the other instruments that make a sound, but not a definite note - the triangle, cymbals, drums, tambourines, wood blocks, castanets - all these, plus many more belong in this group.

Strings

By far the largest family, accounting for more than half of all the players in an orchestra, there are four members of this family.

1. The Violin
2. The Viola
3. The Cello
4. The Double Bass

All work in exactly the same way. The instrument is essentially a hollow box, with four strings stretched over it, and each one is tightened to a different tension, and is of a different thickness, giving a different sound. The vibrations of the strings are carried into the box, and cause the air in the box to vibrate, thus causing the sound. The strings can be vibrated either by plucking them with the fingers, or by drawing a bow across the strings, thus producing a much smoother, continuous, sound.